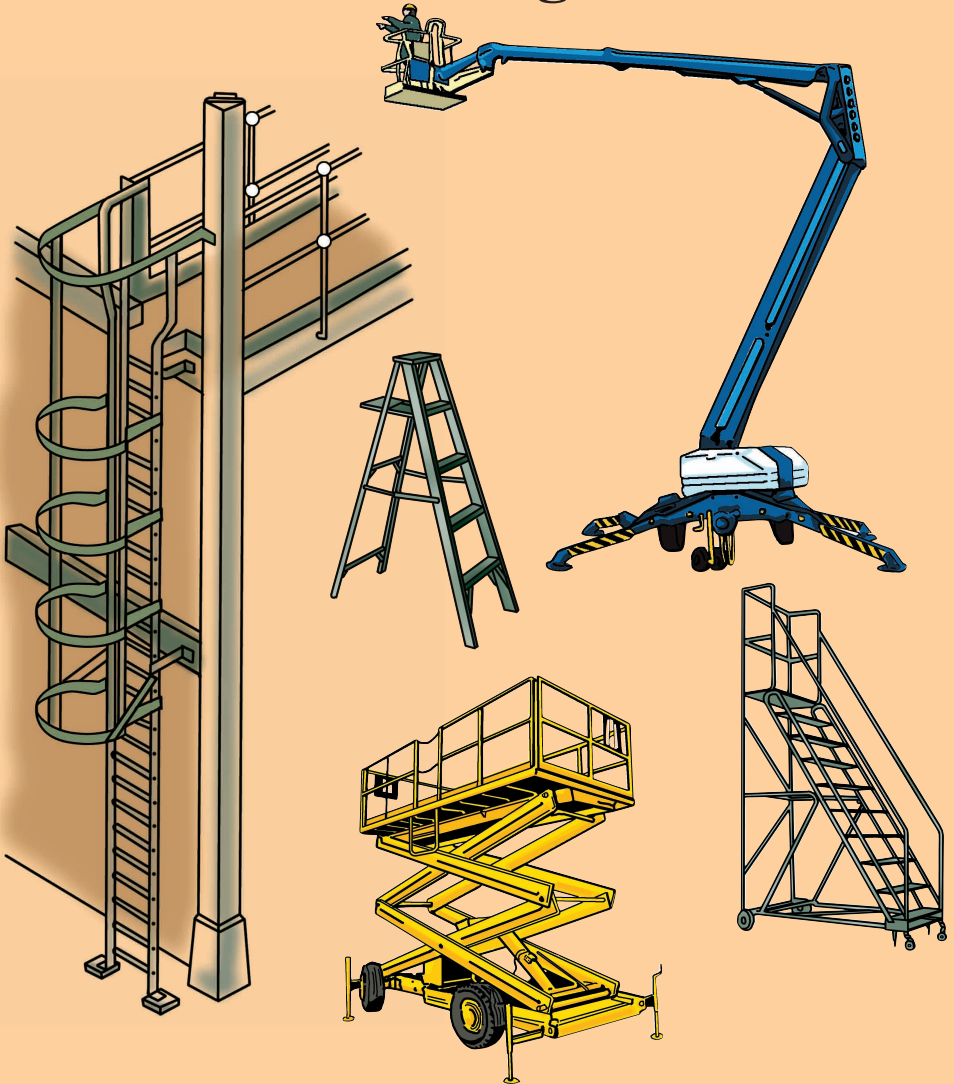


Safety at Work

A Guide to Ladders and Elevated Working Platforms



This guidebook is published by the
Occupational Safety and Health Branch of the Labour Department

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This guidebook is issued free of charge and can be obtained from the offices of the Occupational Safety and Health Branch of the Labour Department. It can also be downloaded from website of the Department at http://www.labour.gov.hk/eng/public/content2_8d.htm. For enquiries on addresses and telephone numbers of the offices, please visit the website of the Department at <http://www.labour.gov.hk/eng/tele/osh.htm> or call 2559 2297.

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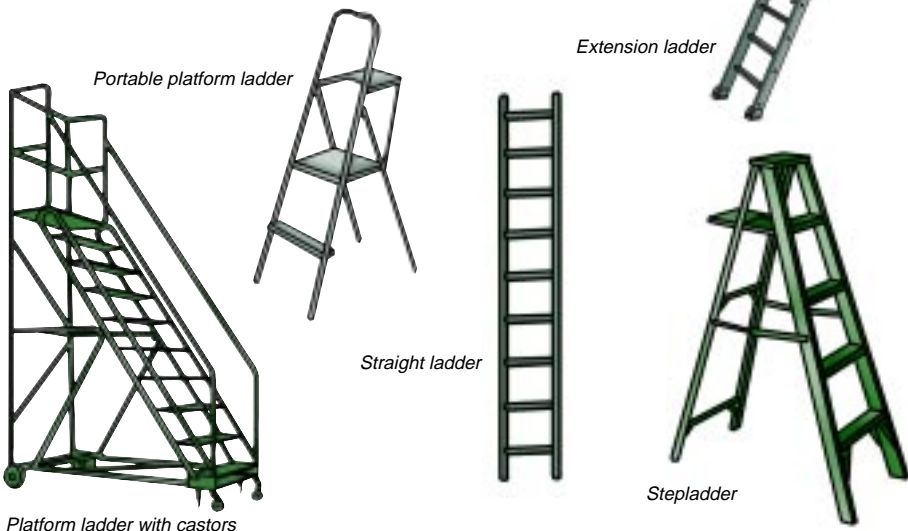
(I) Foreword

Ladders and elevated working platforms are common ancillary tools for works at height. Every year, a considerable number of workers are injured whilst working at height. Some are seriously injured or lose their lives. Detailed analysis reveals that the accidents are either caused by workers not using these ancillary tools or workers fail to use the tools properly. In fact, most of the accidents could be avoided. In publishing this guidebook, the Labour Department aims to use plain language and illustrations to introduce to the industries common types of ladders and elevated working platforms, their applications and safety measures. We hope this guidebook could serve to raise workers' safety awareness in the use of ladders and elevated working platforms, thus helping to avoid accidents.

(II) Ladders

Ladders can be classified as portable ladders and fixed ladders. There are also straight ladders and stepladders. To ensure safety, we need to consider the following safety hints before using a ladder:

- 1. Application** – What kind of work do you intend to perform using the ladder?
- 2. Selection** – Which type of ladder do you need?
- 3. Process** – Under what circumstances will you work? What safety precautions should you take?
- 4. Training** – Have you received training on the safe use of ladder?



Platform ladder with castors

Different types of ladder

Note the following points in each of the safety hints:

1. Application

- Conduct risk assessment at the workplace where a ladder will be used to identify the potential hazards. (e.g. Is there a danger of electric shock? Is the ladder placed on a busy passageway?)
- Identify the type and nature of work.
- Consider the frequency and duration of using the ladder.
- Be certain about the application of the ladder to be used.
- Consider using other access equipment that is safer than the ladder.



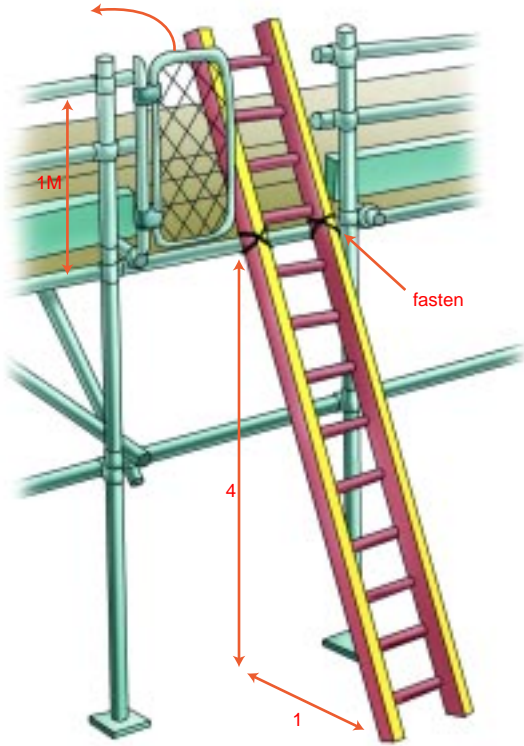
Avoid using the ladder near a door or on a busy passageway.

2. Selection

- Use the ladder in accordance with the manufacturer's instruction is of paramount importance.
- Use the right type of ladder and ensure it is structurally sound. You may need to use a straight ladder, a stepladder or other access equipment (such as a mobile ladder scaffold).
- Choose the ladder that is suitable for the job – do not use the same ladder for all jobs. Choose the ladder of appropriate size and made of proper material according to the needs of work.
- If fittings or accessories are required, contact the supplier or manufacturer of the ladder to find out what kind of fittings or accessories can fit the needs. Under no circumstances should the structure of the ladder be altered without authorisation.

3. Process

- Make sure that the footwear is free from mud or grease before climbing up a ladder.
- Ensure that there is sufficient space behind the steps to provide a proper footing.
- Employers should properly instruct workers of the hazards in the workplace as well as the relevant safety measures needed.
- Ladder users should read and follow the information and instruction provided by the manufacturer.
- Pay attention to overhead objects or electric cables while using the ladder.
- Properly store and maintain the ladder.
- Ensure the ladder is stable and resting on an even and solid ground. Fasten the ladder properly with ropes whenever necessary, or have a fellow worker to stabilise the ladder with hands.
- For straight ladders, the top of the ladder should be at least one metre above the resting place to provide for the handrail. The ladder should be placed on a 1:4 ratio of setback distance to height. The ladder should be placed on a 1:4 ratio of setback distance to height.
- The top and bottom of the ladder should be kept free from obstruction.



Securely fasten the ladder to avoid slipping. Place the ladder on a 1:4 ratio of setback distance to height. The top of the ladder should be 1M above the support point.



Label the damaged ladder.

- Inspect the ladder before use and regularly afterwards. Use a checklist in conducting inspections. The result should be confirmed and signed by the officer concerned.
- Inspection and repair of the ladder should be done by competent persons. Damaged ladders should be clearly labelled and removed immediately.
- Draw up rescue measures to deal with accidents, including persons falling from ladders or fall of ladders.

The following are common situations of accidents, which should be avoided as far as possible:



Never overstretch the body to either sides of the ladder.

- never carry heavy objects when climbing up or down a ladder. Tools or materials can be lifted by rope to the workplace or raised by somebody else. Light tools or materials can be carried in a holster attached to a belt or in a tool bag;
- never use makeshifts, such as chairs, cylinders or boxes, to replace the ladder;
- never join short ladders together to form long ones;
- never overstretch the body to either side of the ladder. Instead, one should position the ladder at the location where work is to be performed;
- never try to straighten or use any ladder that is already bent;
- never paint the wooden ladder since the paint may cover up cracks and defects in the ladder; and
- never overload the ladder. Under normal circumstances, only one person is allowed to work from a ladder.

4. Training

- Train the worker on related safety information, or supervise the worker by the experienced.
- The training should focus on the equipment to be used and the work to be performed.
- The content of training should include:
 - the proper technique of climbing a ladder. When climbing up or down a ladder, one must face the ladder and maintain a three-point contact with it; and
 - both the best practice and the unsafe act.

Face the ladder and maintain a three-point contact when moving up and down.



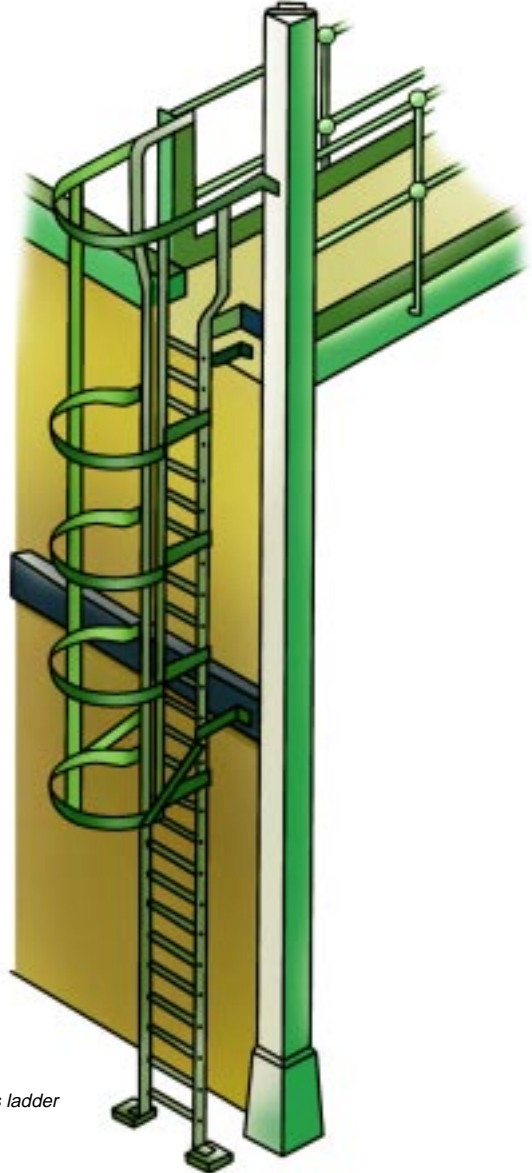
The above points on the safe use of ladder are not exhaustive. Users should work out other safety measures according to their own needs to suit their working procedures and environment.

Remember: For works at a height of more than 2 metres, ladders should only be used for access and egress, but not as a tool to work from.

(III) Fixed Access Ladders

Fixed access ladders are widely used as means of access to and egress from tower cranes, overhead structures in construction works (e.g. flyovers), water tanks in buildings, lift machine rooms, shafts, etc. For fixed access ladders reaching a height of 3 metres or more, the following points should be noted:

- suitable safety hoops should be installed;
- the spacing of the safety hoops should not exceed one metre;
- the lowest safety hoop should be installed at a height not exceeding 3 metres above the ground;
- the highest safety hoop should be installed one metre above the upper end of access and egress. If it is a working platform, the hoop should be connected to the guard-rail of the platform; and
- there should be a suitable landing place or rest platform at an interval of not greater than 9 metres along the fixed access ladder. The landing place or rest platform should be fitted with suitable guard-rails of adequate strength. The height of the top guard-rail should be between 900 and 1,150 mm while the height of the intermediate guard-rail should be between 450 and 600 mm. The toe-board installed should be of at least 200 mm high.



Fixed access ladder

(IV) Elevated Working Platforms

The use of elevated working platforms is increasingly popular. They are widely used to carry workers for works at height, such as maintenance of ceilings and cleaning the external wall of buildings.

There are many different designs of elevated working platforms. Each type of working platform has its own application. When choosing a suitable elevated working platform, the following points should be taken into consideration:

- type and size of the platform required;
- the loading capacity, height of elevation, mobility and stability;
- the conditions and restrictions on the road or at the place where the platform is set up, e.g. whether there are traffic lanes nearby;
- the distance to be kept between the platform and the nearby object (such as building);
- passageway for safe access to and egress from the platform;
- type and nature of the material to be carried; and
- whether the manufacturer or the agent provides training courses on maintenance and operations of the platform.



Different types of elevated working platforms

Note the following points when using the elevated working platform:

- inspect the platform thoroughly every time before use;
- ensure the load to be carried does not exceed the maximum safe working load as specified by the manufacturer;
- rest the elevated working platform on an even and solid ground;
- extend the outriggers of the elevated working platform fully if the working platform has such provision;
- ensure the elevated working platform is kept at a safe distance from overhead cables;
- label all operation buttons for their usage and direction of operation;
- secure all guard-rails of the platform;
- do not move the platform while there are workers remaining on it;
- cordon off the working area of the platform to avoid other persons from being endangered;
- examine, test and maintain the platform regularly and keep records;
- provide proper training and give adequate instruction to workers before assigning them to use the working platform. The training and instruction should include:
 - ❖ detailed safety operating procedures specified by the manufacturer;
 - ❖ limitations on using the platform;
 - ❖ limits on loading;
 - ❖ items to check before using the platform; and
 - ❖ demonstration and practice on the operating procedures.

(V) Enquiry

If you wish to enquire about this guidebook or obtain more information on occupational safety and health matters, please contact the Occupational Safety and Health Branch of the Labour Department through :

Telephone : 2559 2297 (auto-recording after office hours)
Fax : 2915 1410
E-mail : enquiry@labour.gov.hk

Information on the services offered by the Labour Department and on major labour legislation can also be found by visiting the website of the Labour Department at <http://www.labour.gov.hk>.

Information on the services offered by the Occupational Safety and Health Council can be obtained through their hotline 2739 9000.

Complaints

If you have any complaints about unsafe workplaces and practices, please call the Labour Department's occupational safety and health complaint hotline at 2542 2172. All complaints will be treated in the strictest confidence.

